Figure 1A

Figure 1B

Figure 1C

Figure 1D

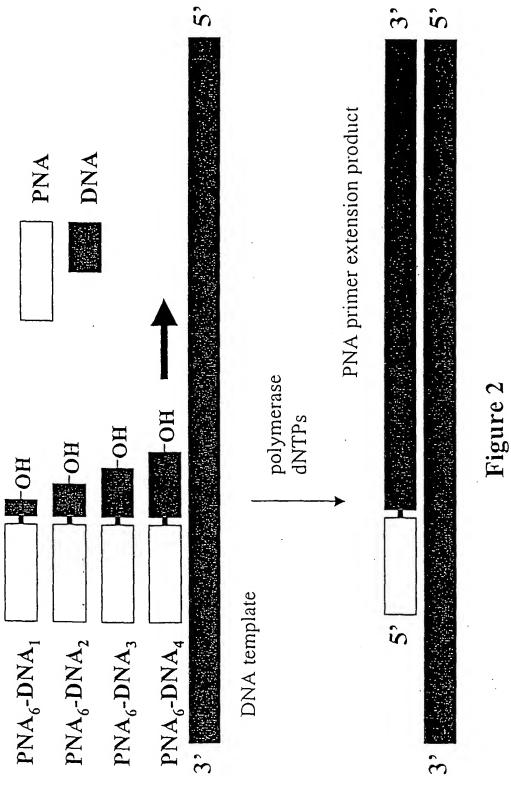


Figure 3A

Figure 3B

Figure 4

MMT-NH MMT-NH
$$CO_2H$$
 CN CN

$$Y-NH$$
 $X-R-O$
 P
 N

 $X = amide, urea, CH_2, O, or R$

$$R = (CH_2)_n \text{ or } (CH_2CH_2O)_n$$

 $n = 1 - 10$

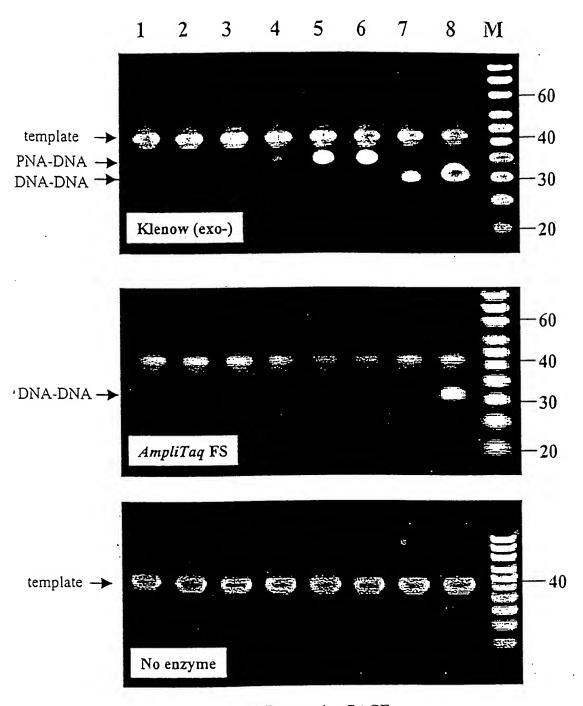
Y = trifluoroacetyl, Fmoc, trityl, MMT, DMT

Figure 5

$$\begin{array}{c} & & & & & & & & & \\ & & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & \\ & & \\ & & \\ & & \\ & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ &$$

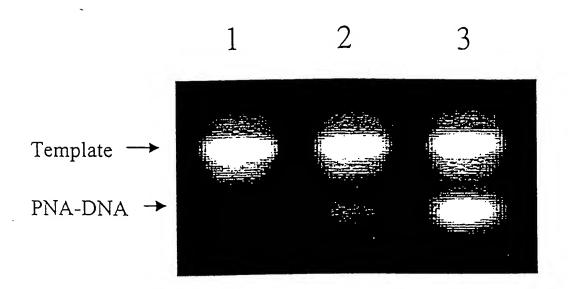
Figure 6A

Figure 6B



15% Denaturing PAGE

Figure 7



15% Denaturing PAGE at 70 °C

Figure 8

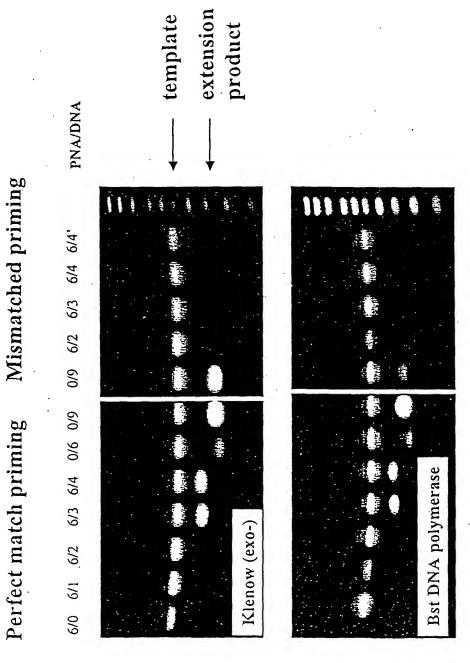


Figure 9

 $PNA_0 - DNA_6$ tagttc $PNA_0 - DNA_9$ tagttctag $PNA_6 - DNA_9$ TAGTTC Porfor

Perfect match priming (upper case - PNA, lower case - DNA)

TAGTTC-t

 $PNA_6 - DNA_1$

 $\dot{P}NA_6 - DNA_2$ TAGTTC-ta $PNA_6 - DNA_3$ TAGTTC-tag

2 PNA₆-DNA₄ TAGTTC-taga 3' — Extension | 111111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111

Perfect match DNA template, 38nt

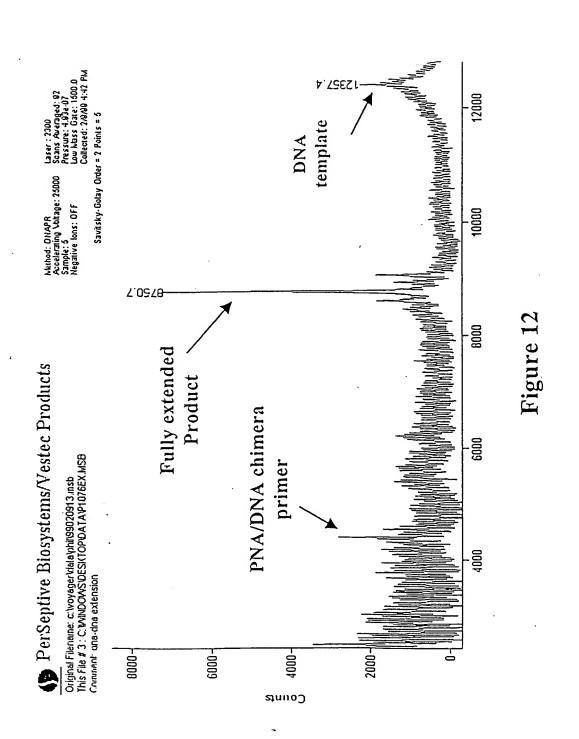
Figure 10

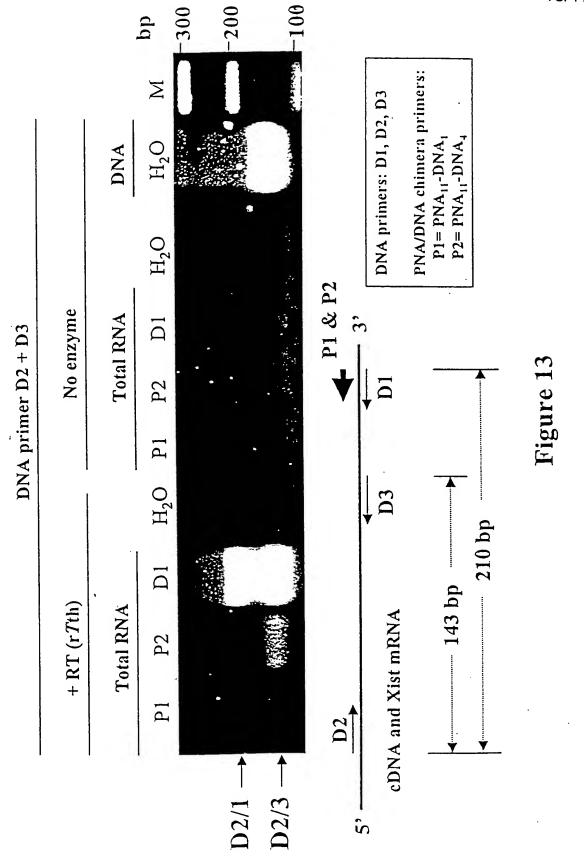
Mismatched priming

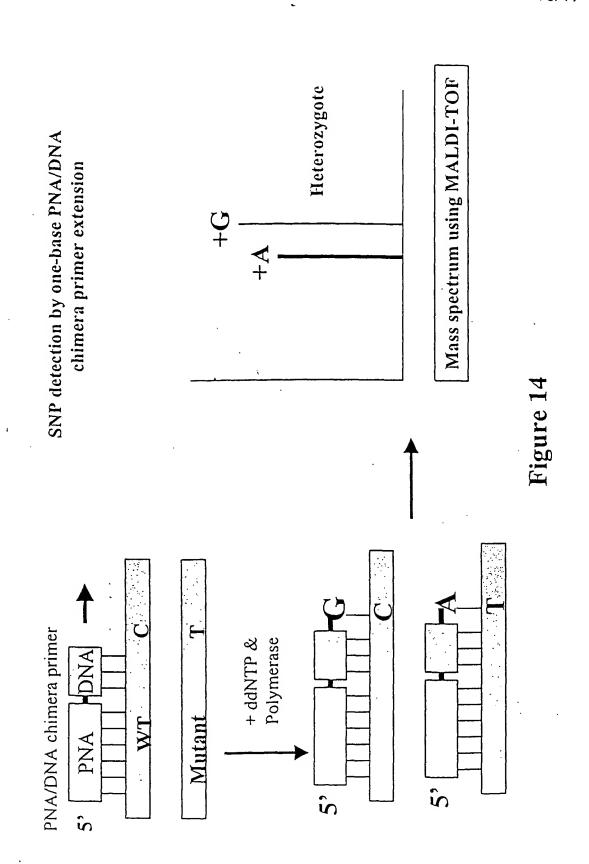
DNA bases PNA bases	0	6	9	6 Extension	gtacgatacacaactcgc 5'	0 NO. 12)
(upper case - PNA, lower case - DNA)	PNA ₀ -DNA ₉ tagttc _p tag	$\begin{bmatrix} PNA_6 - DNA_2 \end{bmatrix}$ TAGTTC-ta	PNA ₆ -DNA ₃ TAGTTC-tag	5' PNA ₆ -DNA ₄ TAGTTC-taga	3' aaggtccgaatcaag a <u>c</u> ctggtacgatacacaactcgc 5	mismatch DNA template, 38nt (SEQ. ID NO. 12)

3, aaggtccgaatcaag 5

Figure 11







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dG0	q						a 50 mM each dNTP (dATP:dCTP:dTTP)	b. dTTP replaced by 1 μM TAMRA-dUTP in (a) c. ddGTP:dGTP:dATP:dTTP:dCTP 500:5:50:50:50 μM
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Figure 15